ABSTRUCT OF THE DISCLOSURE

A practical object recognition method and a vehicle surroundings monitoring apparatus using this method are provided which are efficient in data processing even when quite a lot of detection points data are obtained by using a scanning type laser radar. A laser radar scanningly irradiates electromagnetic waves around a subject vehicle on which the vehicle surroundings monitoring apparatus is mounted, detects the electromagnetic waves reflected from objects lying around the subject vehicle, and outputs a plurality of directions of scanning irradiation and detected distances from the subject vehicle to the objects in the respective directions of scanning irradiation. A recognition unit detects, based on the detection results of the laser radar, a relative position and a relative speed of each of the objects lying around the subject vehicle with respect to the subject vehicle. The recognition unit stores whether or not detection points data (i.e., a direction of scanning irradiation and a detected distance in that direction) exists in each of MxN small regions into which X, Y coordinates with an X axis being set in a widthwise direction of the subject vehicle and a Y axis being set in a running direction of the subject vehicle are divided, in a two-dimensional array including a plurality of elements corresponding to the small regions, respectively. The recognition unit performs arithmetic operations of multiplication and summation of the respective elements of the two-dimensional array while sequentially scanning a mask of a two-dimensional array comprising JxK (J < N, K < M) elements, and determines attributes such as positions, sizes, etc., of the objects lying around the subject vehicle.